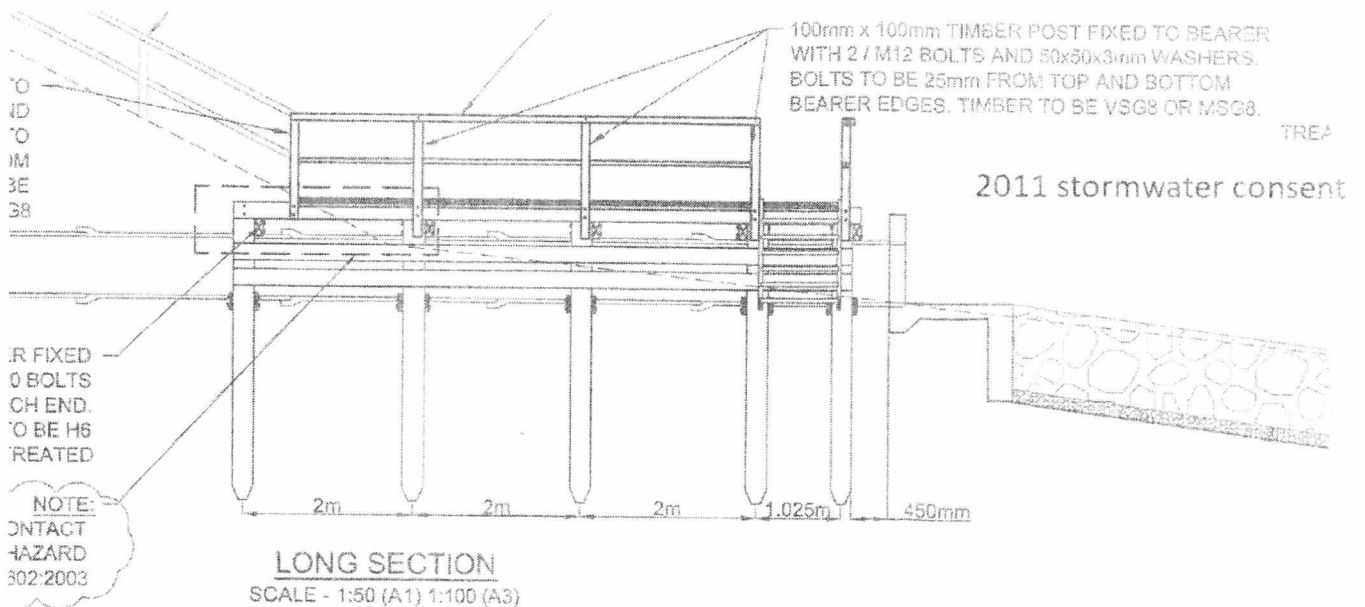
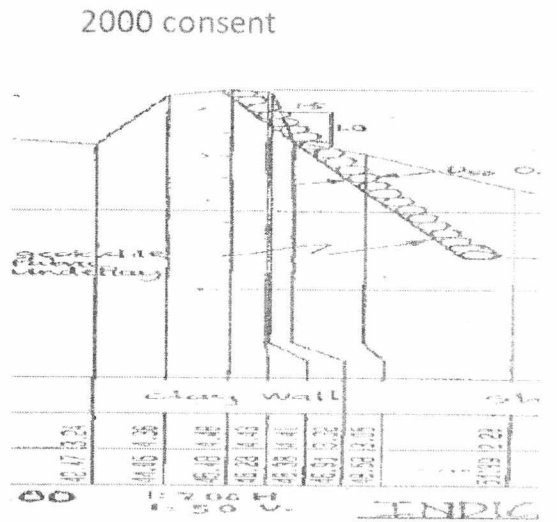
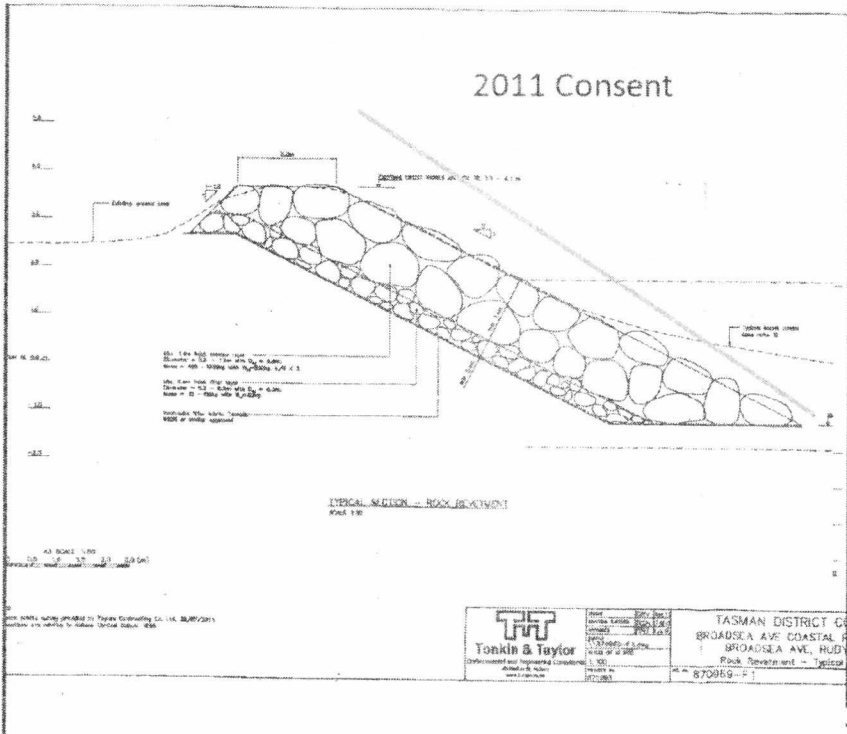


Tabled by Bruno
 Lemke at ESC
 meeting
 2/6/18



Tabled by Lewis Solomon at ESC

21/6/18

Tasman and Nelson Water Network Leakage

"The estimated current volume of leakage in the Waimea Basin schemes (after subtraction of apparent losses) is expected to be over 3000 cu m per day."

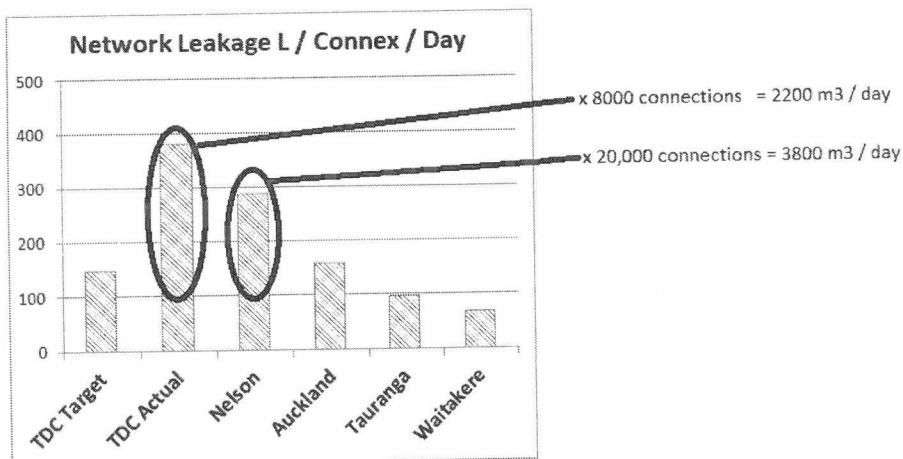
MWH Stantec Report May 2017

There are 8000 connections on the Waimea Basin schemes so the leakage is over 375 L / day per connection, which is more than double the target in the Water Asset Management Plan.

"The average real loss in NCC over the past 5 years is approximately 290 L / day per connection, compared to Tauranga at 100 L / day per connection."

Cameron Gibson Wells Report November 2014

There are 20,000 connections on the NCC network.



If NCC and TDC cooperate and reduce their network leakage to a rate comparable to that of Tauranga then an extra 6000 cu m / day is available.

The average consumption of the residential, commercial, rural-restricted and light industrial consumers in Richmond, Mapua, Hope and Brightwater is 5000 cu m / day.

Lewis H Solomon, BE MIET

Tabled by Murray
Dawson at ESC
21/6/18

Comments (V.2) on Engineering Meeting 10th May 2018

Item 9.2. Water restrictions protocol.

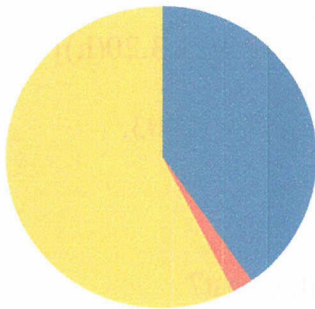
The question is 'what is the motivation for these by-law changes?' Existing restriction regime has been adequate to achieve required cuts in usage.¹

1.4 "No prearranged restriction steps."

Current restrictions table exists.²

1.8 Do the benefits of these changes and associated consultation process justify the costs and staff time? Costs of consultation was one reason given for not consulting on the dam.

4.4 Why is 'River Road' used as an example? This is very non representative. It is about 2% of the total allocation of all TDC bore-fields on the Waimea plains. Also it supplies non-metered rural restricted connections only, i.e. non residential.



Typical river road usage is 1.88m³/day/connection.³

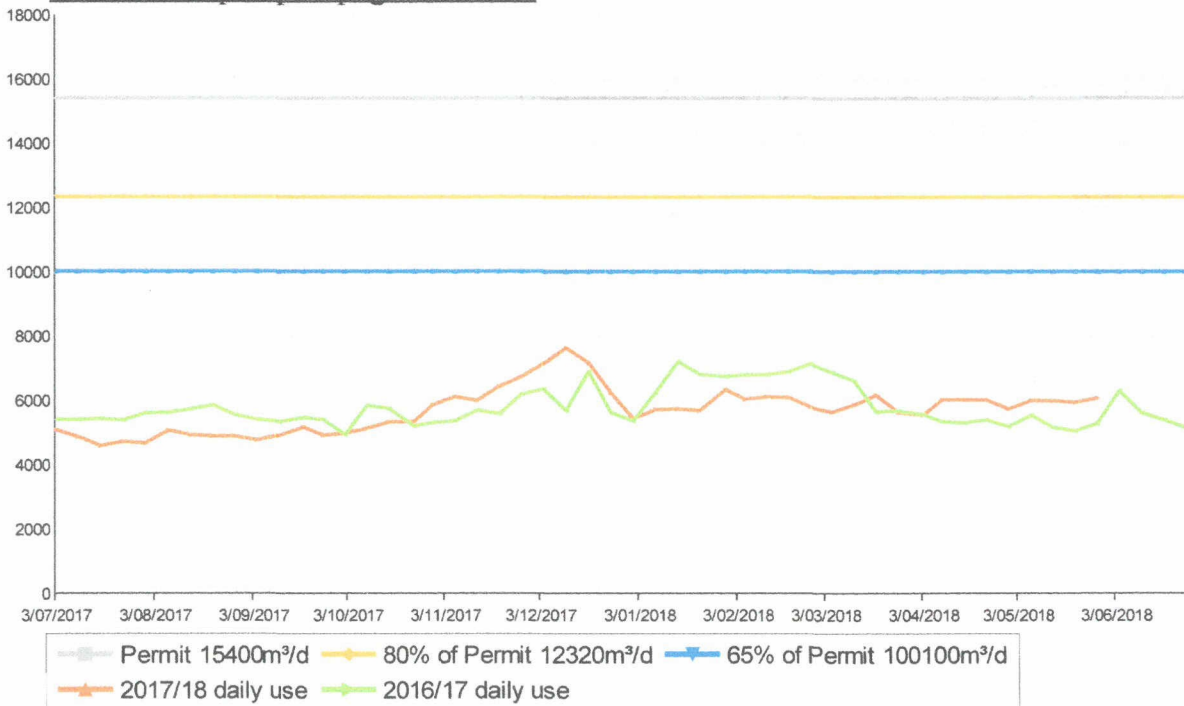
Typical Richmond usage 0.5 m³/day/connection.⁴

Waimea/Mapua is most representative.

River road. Waimea/Mapua. Other.

1. Note from graph below that pumpage/usage declined by more than that required by rationing/restriction targets. (Approximately Dec. Significant rain occurred in Jan.)

Waimea/Mapua pumpages 2017/18



Note that the 65% rationing limit is not threatened.

4.9 Why is the rationing “...becoming increasingly critical because of more severe rationing on the Waimea plains.”

[meeting 21st June]

Item 9.2 para 4.5 “No dam...the TRMP rationing rules ...become stricter.”

Current rationing regime (Table 1C Chapter 31) has been in force since September 2015.
[See attached tables 1B and 1C.]

No amendment to the triggering regime has been notified.

4.13 “...stage 5 rationing is in force(once every 5-6 years).”

Current no dam triggers for stage 5 are;

(i) Salt levels exceed 1 millisemen/cm. [TRMP 30.1.3.20 (g)]

This happened for a few days in 2001. **No occurrences** since then.

(ii) Waimea flow-rate falls below 500 L/s at nursery recorder. [TRMP 30.1.3.20(h)]

This has not occurred since measurements started in Dec 2004.

Flow-rate was less than 500 L/s in 2001 and for an estimated 3 weeks in 2003.

[H65 attachment 6, table 3]

NB. Applying stage 5 is at the discretion of council.

4.18 Has imposition of restrictions been approved by council in the past?

LGA s.151 states this should be the case.

4.20 Will this be a “communications campaign” or another opportunity to spread alarm regarding the 'dire' water situation.

MWH/Stantec (May 2017 “100 year Modelling...)

2. Page 14, table 3-6 presumably supplied by TDC.

3. Fig 3-8

4. Fig 3-9

Table 1B
MINIMUM FLOWS AND TRIGGERS FOR RATIONING: WAIMEA ZONES – UNTIL OPERATION OF THE WAIMEA COMMUNITY DAM COMMENCES

This rationing and flow regime applies to any water permits affiliated to the Waimea Community Dam before the Waimea Community Dam commences operation

Zone	Minimum Flow	Trigger for First Rationing Step	Trigger for Consultation
Delta	None	1.0 millisiemens per centimetre In WWD50 (E1611825N5427949NZTM)	2800 l/sec in Wairoa River at Irvines
Reservoir Upper Catchments Waimea West Upper Confined (UCA)		2500 l/sec in Wairoa River at Irvines	2800 l/sec in Wairoa River at Irvines
Lower Confined Aquifer (LCA) Golden Hills Hope and Eastern Hills		Step 1 rationing introduced when Step 2 introduced for Reservoir Zone	

Note: Progression to any further rationing with reference as necessary to Policy 30.1.3.20 is at the discretion of the Council during times of low water flows or levels, in consultation with the Dry Weather Task Force

C47 4/13
Op 9/15
C56 9/15
Op 9/16

Table 1C
MINIMUM FLOWS AND TRIGGERS FOR RATIONING: WAIMEA ZONES – NO WAIMEA COMMUNITY DAM

This rationing and flow regime applies if substantial progress towards giving effect to the applicable resource consents for construction of the Waimea Community Dam has not been made by 1 November 2017 or if the Waimea Community Dam has not commenced construction by 1 November 2020 and also applies to permits not affiliated until the dam commences operation

Proposed as at 24 September 2016
[Row above is amended as follows:]

Table 1C
MINIMUM FLOWS AND TRIGGERS FOR RATIONING: WAIMEA ZONES – NO WAIMEA COMMUNITY DAM

This rationing and flow regime applies if substantial progress towards giving effect to the applicable resource consents for construction of the Waimea Community Dam has not been made by 1 November 2019 or if the Waimea Community Dam has not commenced construction by 1 November 2020 2022 and also applies to permits not affiliated until the dam commences operation

Zone	Trigger Flow (litres per second)				
	Step 4 Rationing Trigger	Minimum Flow	Trigger for Third Rationing Step	Trigger for First Rationing Step	Trigger for Consultation
Delta	800 l/sec in the Waimea River at the TDC Nursery recorder	800	2300 l/sec in Wairoa at Irvines	1.0 millisiemens per centimetre in any used bore	3000 l/sec in Wairoa River at Irvines
Reservoir Upper Catchments Waimea West Upper Confined (UCA)				2750 l/sec in Wairoa River at Irvines	
Lower Confined Aquifer (LCA) Golden Hills Hope and Eastern Hills				Step 1 rationing introduced when Step 2 introduced for Reservoir Zone	

Notes:

- The 800 litres per second minimum flow measurements are carried out within 500m of the TDC Nursery Site depending on the river morphology at that time.
- Progression beyond step 4 is at the discretion of the Council during times of low water flows or levels, in consultation with the Dry Weather Task Force with reference as necessary to Policy 30.1.3.20.

C47 4/13
Op 9/15
C56 9/15
Op 9/16
C63 9/16

Table 1D
MINIMUM FLOWS AND TRIGGERS FOR RATIONING: WAIMEA ZONES – NO AFFILIATION TO THE WAIMEA COMMUNITY DAM

This rationing and flow regime applies to water permits not affiliated to the Waimea Community Dam and will apply once operation of the Waimea Community Dam commences and all triggers are based on the unmodified flow of the Wairoa River at Irvines

Zone	Trigger Flow (litres per second)				
	Step 3 Cease	Trigger for Second	Trigger for First	Trigger for	Trigger for resuming abstraction

C56 9/15
Op 9/16